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EXAMINER

SOHN, SEUNG C

ART UNIT PAPER NUMBER

2878

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/622,278

Applicant(s)

HARTRUMPF, MATTHIAS

Examiner

Seung C. Sohn

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 25 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 14-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 14-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on 25 July 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on July 25, 2002, have been disapproved because of Fig. 10. Mere block diagrams cannot represent features of the invention. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, as stated above, a Wollaston prism, a retarding plate of a Glan-Thomson prism, filters, and a position-resolving photo diode must be clearly shown, instead of mere block diagrams as shown in the proposed drawing correction filed on July 25, 2002, or the features canceled from the claims 24, 25 and 29. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:
On page 4, line 24, "Fig. 3" should be changed to – Fig. 4 --.
On page 4, line 25, "Fig. 4" should be changed to – Fig. 3 --.

On page 5, line 9, "is" after "The amplitudes of these signals" should be changed to -- are --.

Appropriate correction is required.

Claim Objections

4. **Claim 27** is objected to because of the following informalities:

On claim 27, line 2, "from" after "receiver unit" should be changed to -- form --.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. ***Claims 14-15 and 18-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (Patent No. US 5,691,839) in view of Marxer et al. (US Patent No. 6,271,916).***

Referring to claim 14, Kobayashi shows in Fig. 1 the following elements of applicant's claim:

a) an emitter unit having a laser (1), a beam deflector unit (4, i.e., AOD deflector) and an optical emitter system (14, i.e., objective lens) which define a

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scanning beam path and a scanning plane (Col. 95 lines 17-20 and Col. 5, lines 61-65);

b) a receiver unit including a photo detector (26) disposed in the focal plane (24, i.e., confocal point aperture) of an optical receiver system (14, i.e., objective lens) for a receiver beam path, wherein the surface normal of said optical receiver system is parallel with the scanning beam path (Col. 6, lines 24-26); and

c) a beam splitter (2) ahead of said dark field stop for splitting a partial beam from the receiver beam path, said photo detector including a photo diode arranged in said partial beam, said photo diode being disposed approximately in the focal point of said optical receiver system (Col. 5, lines 15-17).

Kobayashi discloses as above, but does not disclose a dark field stop disposed ahead of said photo detector in the receiver beam path in the focal plane of said optical receiver system. Marxer et al. shows in Fig. 4 a dark field stop (41) (Col. 9, lines 45-49). Therefore, it would have been obvious to a person having ordinary skill in the art to provide a dark field stop of Marxer et al. in the device of Kobayashi for the purpose of preventing directly reflected near specular laser light and any light diffused by optical components from reaching the photodetector (Col. 11, lines 29-32).

Referring to claim 15, Kobayashi shows in Fig. 1 that the emitter unit (1, 4, 14) and said receiver unit (26) are disposed on the same side relative to the object (15) to be measured.

Referring to claim 18, Kobayashi shows in Fig. 3 additional receiver unit (36, i.e., photosensor) disposed at an angle different from 0 degree or 180 degree relative to an optical axis of the scanner unit in the scanning plane (Col. 8, lines 37-39).

Referring to claims 19-20, Kobayashi shows in Fig. 3 an optical system (5, i.e., dichroic mirror) arranged in the scanner beam path for splitting the scanning beam in the direction orthogonal on the scanning direction and a grid having lines oriented orthogonally with respect to the scanning direction (Col. 8, line 58-62).

Referring to claims 21-22, Kobayashi shows in Fig. 3 an optical system (2, i.e., beam-splitter) arranged in the scanner beam path for splitting the scanning beam in the direction parallel with the scanning direction and a grid having lines oriented parallel with respect to the scanning direction (Col. 5, line 16).

Referring to claim 23, Kobayashi shows in Fig. 1 optical elements (25p, i.e., polarizing plate) disposed in the scanning beam path and/or the receiver beam path for radiation of different polarization (Col. 6, line 25).

Referring to claim 24, the modified device of Kobayashi discloses as above, but is silent as to whether the optical elements comprise at least one of a polarizing beam splitter, a Wollaston prism, and a retarding plate of a Glan-Thomson prism. It would have been obvious to a person having ordinary skill in the art to provide those optical elements in the device of Marxer et al. since the use of those well known optical elements is a common structural provision taken by those skilled in the art for improving the efficiency of the system.

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Referring to claim 25, Kobayashi shows in Fig. 1 filters (25F, i.e. wavelength filter) selective in terms of wavelength disposed in the receiver beam path (Col. 6, line 37).

Referring to claim 26, Kobayashi discloses said filters are color filters (i.e., wavelength filters) (Col. 6, line 37).

Referring to claim 27, Kobayashi et al. shows in Fig. 1 that the emitter unit (1, 4, 14) and the receiver unit (26) form a single combination unit and a reference beam path is realized in the combination unit, in the outside space or by means of a light guide, which is superimposed by the beam path coming from the object (15) to be measured in such a way that the resulting interference pattern which varies locally and in the course of time is detected by means of at least one detector element (31, photosensor) (Col. 7, lines 5-12).

Referring to claim 28, it would have been obvious to a person having ordinary skill in the art to use the modified device of Kobayashi to control a production process since inspection and testing is desired in the production line, and by checking the component at various stages within the manufacturing process, each piece produced can be tested.

6. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (Patent No. US 5,691,839) in view of Marxer et al. (US Patent No. 6,271,916) and Musto et al. (US Patent No. 4,432,648).

Referring to claim 16, the modified device of Kobayashi discloses as above, but does not disclose a retro reflector unit arranged behind the object to be measured. Musto et al. shows in Fig. 1 retro reflectors (28, 53 and 54) (Col. 3, lines 16-24 and Col. 4, lines 32-35). Therefore, it would have been obvious to a person having ordinary skill in the art to provide a retro reflector unit of Musto et al. in the modified device of Kobayashi since the use of a retro reflector unit is a common structural provision taken by those skilled in the art for performing the specific types of measuring operations as taught by Musto et al.

Referring to claim 17, it would have been obvious to a person having ordinary skill in the art to provide a retro reflector unit of Musto et al. in the modified device of Kobayashi since the use of a retro reflector unit is a common structural provision taken by those skilled in the art for performing the specific types of measuring operations as taught by Musto et al.

7. ***Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (Patent No. US 5,691,839) in view of Musto et al. (US Patent No. 4,432,648).***

Kobayashi discloses as above, but does not disclose a retro reflector unit arranged behind the object to be measured. Musto et al. shows in Fig. 1 retro reflectors (28, 53 and 54) (Col. 3, lines 16-24 and Col. 4, lines 32-35). Therefore, it would have been obvious to a person having ordinary skill in the art to provide a retro reflector unit of Musto et al. in the device Kobayashi since the use of a retro reflector unit is a

common structural provision taken by those skilled in the art for performing the specific types of measuring operations as taught by Musto et al.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. ***Claims 29-30 and 34-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi (Patent No. US 5,691,839).***

Referring to claim 29, Kobayashi shows in Fig. 10 the following elements of Applicant's claim:

a) an emitter unit having a laser (63, i.e. laser diode array) (Col. 12, lines 44-51), a beam deflector unit (5, i.e., AOD deflector) and an optical emitter system (14, i.e., objective lens), which define a scanning beam path as well as a scanning plane (Col. 95 lines 17-20 and Col. 5, lines 61-65); and

b) a receiver unit including a photo detector (65, i.e., photodiode array) disposed in the focal plane of an optical receiver system (14, i.e., objective lens) for a receiver beam path, the surface normal of said optical receiver system being parallel with the scanning beam path (Col. 6, lines 24-26) and said photo detector being a photo diode array (Col. 12, lines 61-66).

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Referring to claim 30, Kobayashi shows in Fig. 1 that the emitter unit (1, 4, 14) and said receiver unit (26) are disposed on the same side relative to the object (15) to be measured.

Referring to claims 34-35, Kobayashi shows in Fig. 3 an optical system (5, i.e. dichroic mirror) arranged in the scanner beam path for splitting the scanning beam in the direction orthogonal on the scanning direction a grid having lines oriented orthogonally with respect to the scanning direction (Col. 8, line 58-62).

Referring to claims 36-37, Kobayashi shows in Fig. 3 an optical system (2, i.e., beam-splitter) arranged in the scanner beam path for splitting the scanning beam in the direction parallel with the scanning direction a grid having lines oriented parallel with respect to the scanning direction (Col. 5, line 16).

Response to Arguments

10. Applicant's arguments with respect to claims 14 and 29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seung C. Sohn whose telephone number is (703) 308-4093. The examiner can normally be reached on Monday through Friday from 8:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SCS

SCS
October 19, 2002

Kevin D. ...
Kevin D.
Primary Examiner